

### **ABSTRACT**

Networks and networks for performance monitoring (PM) in a passive optical network, which contain at least one optical line terminator (OLT) and at least one optical network terminal (ONT), provide increased PM flexibility over traditional ONT management and control interface functionality. These networks and networks include setting a PM initialization time at the ONT, maintaining a base PM time at the ONT, zeroing an interval end time counter at the ONT and collecting a first set of PM data in PM bins for a specified PM time interval. The interval end time counter can sequentially increment after completing collection the first set of PM data. Once collection of the first set of PM data is complete and the interval end time counter has been incremented, these networks and networks can collect more sets of PM data in other PM bins for the PM time interval. Once PM data are collected, the OLT can retrieve the PM initialization time and the base PM time from the ONT, as well as the PM data from the PM bins. The OLT can retrieve any of the sets of PM data that were collected during PM data collection. For collecting non-current sets of PM data, the OLT can use the PM initialization time and the base PM time, together with the current network time, to determine a PM bin offset used to identify the appropriate PM bin from which to retrieve the sought-after PM data.